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10/810,701	03/29/2004	Takeo Ohsaka	Q80771	9046
65565	7590	06/28/2007	EXAMINER	
SUGHRUE-265550			JOYNER, KEVIN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/810,701	Applicant(s) OHSAKA ET AL.	
	Examiner Kevin C. Joyner	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/17/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Merk et al. (U.S. Patent No. 6,387,238).

Merk discloses a method for the sterilizing/cleaning of an object with an aqueous solution of a peroxide, which comprises:

Providing an electrolytic cell (10) comprising an anode chamber (12) including an anode (16), a cathode chamber (14) including a gas cathode (18), a catholyte inlet and a catholyte outlet, a membrane (20) separating the anode and cathode chambers, and a particulate solid acid catalyst arranged between the gas cathode and the membrane (column 4, lines 41-64; column 5, lines 24-34; column 8, lines 64-66),

Supplying an oxygen-containing gas to the cathode chamber (column 5, lines 24-28), supplying an aqueous electrolyte containing acetic acid and/or an acetate to the cathode chamber (column 5, lines 42-45; column 6, lines 11-20), and applying a voltage

across the anode and the cathode to thereby electrolytically synthesizing a peracetic acid-containing aqueous solution (column 5, lines 13-21), and

Contacting the object with the peracetic acid-containing aqueous solution (column 11, lines 54-60). More specifically, the reference discloses that the acid catalyst (referenced as peracetic acid precursor) is supplied in solid or liquid form (column 8, lines 64-65). Since the liquid form is supplied between the gas cathode and the membrane as shown in Figure 1, then the solid form is known to be supplied in that area as well. Furthermore, the peracetic acid precursor is added before the formation of the peroxide species (column 8, lines 54-55). Therefore, the peroxide species would be formed by the voltage sent to the cathode and anode and simultaneously react with the peracetic acid precursor to form the peracetic acid solution, and wherein the peracetic acid solution is formed inside the cathode chamber and supplied directly from the chamber to a decontamination system via a fluid line (89) as disclosed in column 11, lines 56-59. Thus, a voltage is applied across the anode and the cathode to electrolytically synthesize a peracetic acid-containing aqueous solution.

Concerning claim 2, Merk also discloses that the aqueous solution of a peroxide used for the sterilizing/cleaning of the object is reused for electrolytic synthesis (column 12, lines 44-52).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merk et al. (U.S. Patent No. 6,387,238) in view of Tennakoon et al (U.S. Patent No. 6,949,178).

Merk is relied upon as set forth in reference to claim 1 wherein Merk discloses a method for the electrolytic synthesis of peracetic acid (column 3, lines 29-40) which comprises electrolytically synthesizing peracetic acid from an acid and an oxygen-containing gas as starting materials in the presence of a solid acid catalyst, said step of electrolytically synthesizing peracetic acid comprises:

Providing an electrolytic cell (10) comprising an anode chamber (12) including an anode (16), a cathode chamber (14) including a gas cathode (18), a catholyte inlet and a catholyte outlet, a membrane (20) separating the anode and cathode chambers, and a particulate solid acid catalyst arranged between the gas cathode and the membrane (column 4, lines 41-64; column 5, lines 24-34; column 8, lines 64-66),

Supplying an oxygen-containing gas to the cathode chamber (column 5, lines 24-28), supplying an aqueous electrolyte containing acetic acid and/or an acetate to the cathode chamber (column 5, lines 42-45; column 6, lines 11-20), and applying a voltage

across the anode and the cathode to thereby electrolytically synthesizing a peracetic acid-containing aqueous solution (column 5, lines 13-21), and

Contacting the object with the peracetic acid-containing aqueous solution (column 11, lines 54-60). More specifically, the reference discloses that the acid catalyst (referenced as peracetic acid precursor) is supplied in solid or liquid form (column 8, lines 64-65). Since the liquid form is supplied between the gas cathode and the membrane as shown in Figure 1, then the solid form is known to be supplied in that area as well. Furthermore, the peracetic acid precursor is added before the formation of the peroxide species (column 8, lines 54-55). Therefore, the peroxide species would be formed by the voltage sent to the cathode and anode and simultaneously react with the peracetic acid precursor to form the peracetic acid solution, and wherein the peracetic acid solution is formed inside the cathode chamber and supplied directly from the chamber to a decontamination system via a fluid line (89) as disclosed in column 11, lines 56-59. Thus, a voltage is applied across the anode and the cathode to electrolytically synthesize a peracetic acid-containing aqueous solution.

Merk does not appear to disclose that the component utilized with the oxygen containing gas in the process is acetic acid and/or acetate. However, it is conventionally known in the art of electrolytic synthesis to use acetic acid and/or acetate to produce peracetic acid. Tennakoon discloses one example of this teaching in a method for the electrolytic synthesis of peracetic acid which comprises electrolytically synthesizing peracetic acid from the acetic acid and/or acetate and an oxygen containing gas as starting materials in the presence of a solid acid catalyst in column

12, lines 19-47. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Merk to utilize acetic acid or acetate to produce peracetic acid, as such is a conventionally known and commonly used chemical in the electrolytic synthesis of peracetic acid as exemplified by Tennakoon.

Response to Arguments

5. Applicant's arguments filed April 17, 2007 with respect to claims 1 and 2 have been fully considered but they are not persuasive.

Applicants' principle arguments are:

(a) The invention of the present claim 1 is characterized in that a peracetic acid-containing aqueous solution is electrolytically synthesized, which limitation is not met by Merk et al. In Merk et al, electrolytically generated hydrogen peroxide reacts with peracetic acid precursor, such as acetic acid and/or acetate, to generate an antimicrobial solution containing peracetic acid. In reference to Fig. 1 of Merk et al, catholyte containing hydrogen peroxide is withdrawn from the cathode chamber 14 through an outlet 72 to a holding chamber 74. The peracetic acid precursor, which may be for example, acetic acid, is supplied to the holding chamber 74 from a reservoir 78 (col. 8, lines 54; col. 9, line 3). The peracetic acid thus produced is carried from the holding tank 74 via a fluid line 89 to a decontamination system 90 (col. 11, lines 54-58).

As discussed above, the peracetic acid precursor is added before or during the formation of the peroxide species (column 8, lines 54-55), wherein it is removed directly

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from the cathodic chamber (14) to a decontamination system (column 11, lines 56-59). Thus, the method receives the peracetic acid precursor in the cathode chamber and is subsequently electrolytically synthesized to form a peracetic acid containing aqueous solution, wherein it is sent directly from the cathode chamber (14) to a decontamination system.

(b) Merk et al does not disclose the use of a particulate solid acid catalyst

As discussed above, Merk discloses a solid acid catalyst in column 8, lines 64-65. The peracetic acid precursor is an acid catalyst as disclosed in column 8, lines 13-52.

6. Applicant's argument with respect to claim 5 has been considered but is moot in view of the new ground(s) of rejection.

Applicants' principle argument is:

(c) The invention of amended claim 5 is characterized in that the particulate solid acid catalyst (44) is arranged between cathode (42) and membrane (43). This limitation of amended claim 5 is not met by Tennakoon et al, where the catalyst provided on the surface of anode (204) is present in the anode compartment and is separated from cathode (207) via intervening electrolyte (205).

The argument is moot in view of the new grounds of rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin C. Joyner whose telephone number is (571) 272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCJ



GLADYS JP CORCORAN
SUPERVISORY PATENT EXAMINER